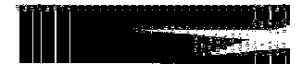

ModSAF conversion to HLA

Russ Richardson



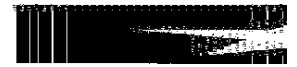
- DIS-like Data Representation

Entity	Platform	Land	Tank	M1
				T72
				T54
			ArmoredFightingVehicle	BMP - 1
				BTR80
		Air	SelfPropelledArtillery	M270_ATACMS
				M109
			SmallWheeledUtilityVehicle	M577A1
			AttackHelicopter	AH64
				RAH66
	Munition	AntiArmor	ElectronicWarfare	JSTARS
			UAV	HUNTER_2GEN
			Guided	BAT_P3I
		BattlefieldSupport9	ATACMS_MISSILE	

- Class attributes are minimal fields of EntityState PDU for each entity type
- Interactions are used for sporadic PDUs, Tactical Messages, hand-off to engineering models, and Aggregation/Disaggregation



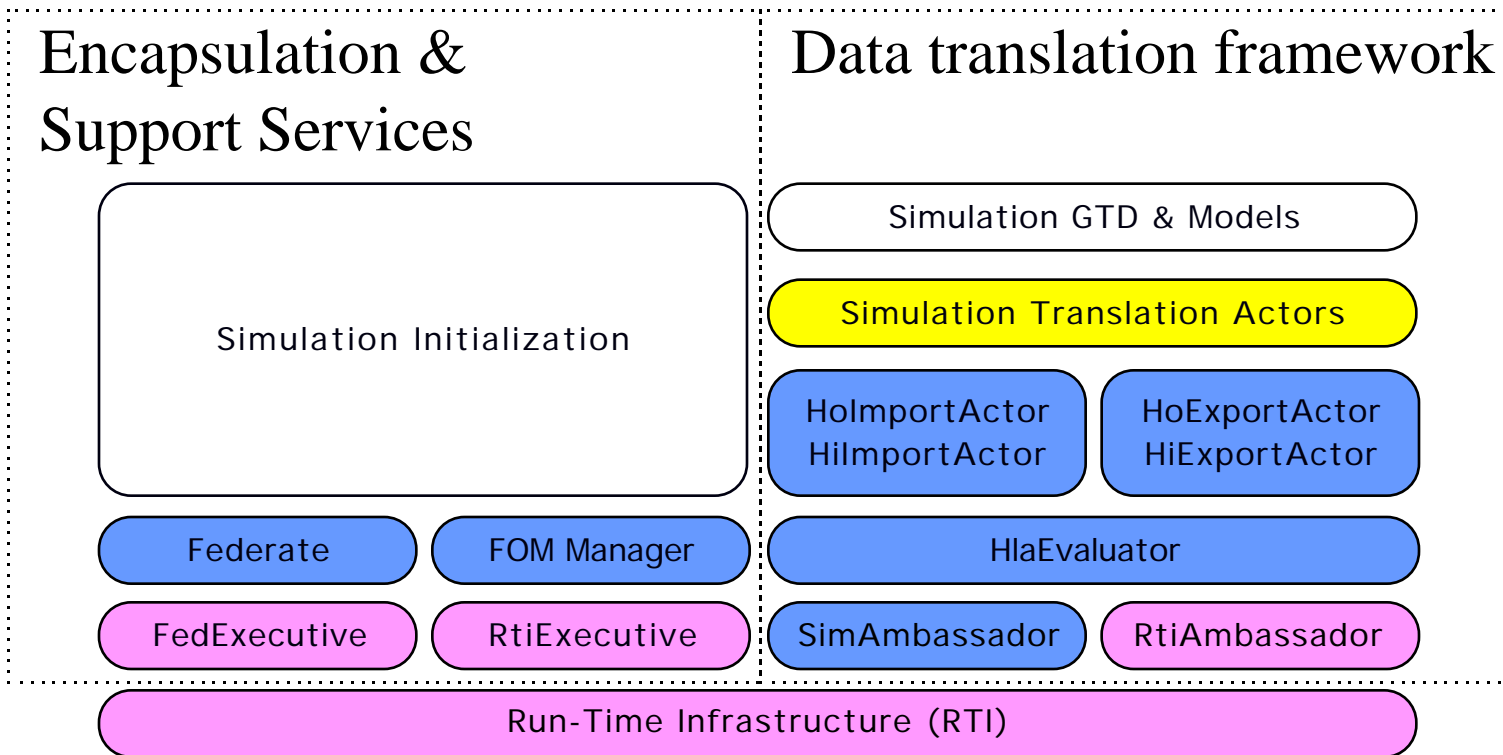
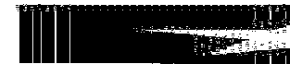
Federation Common Software (FCS)






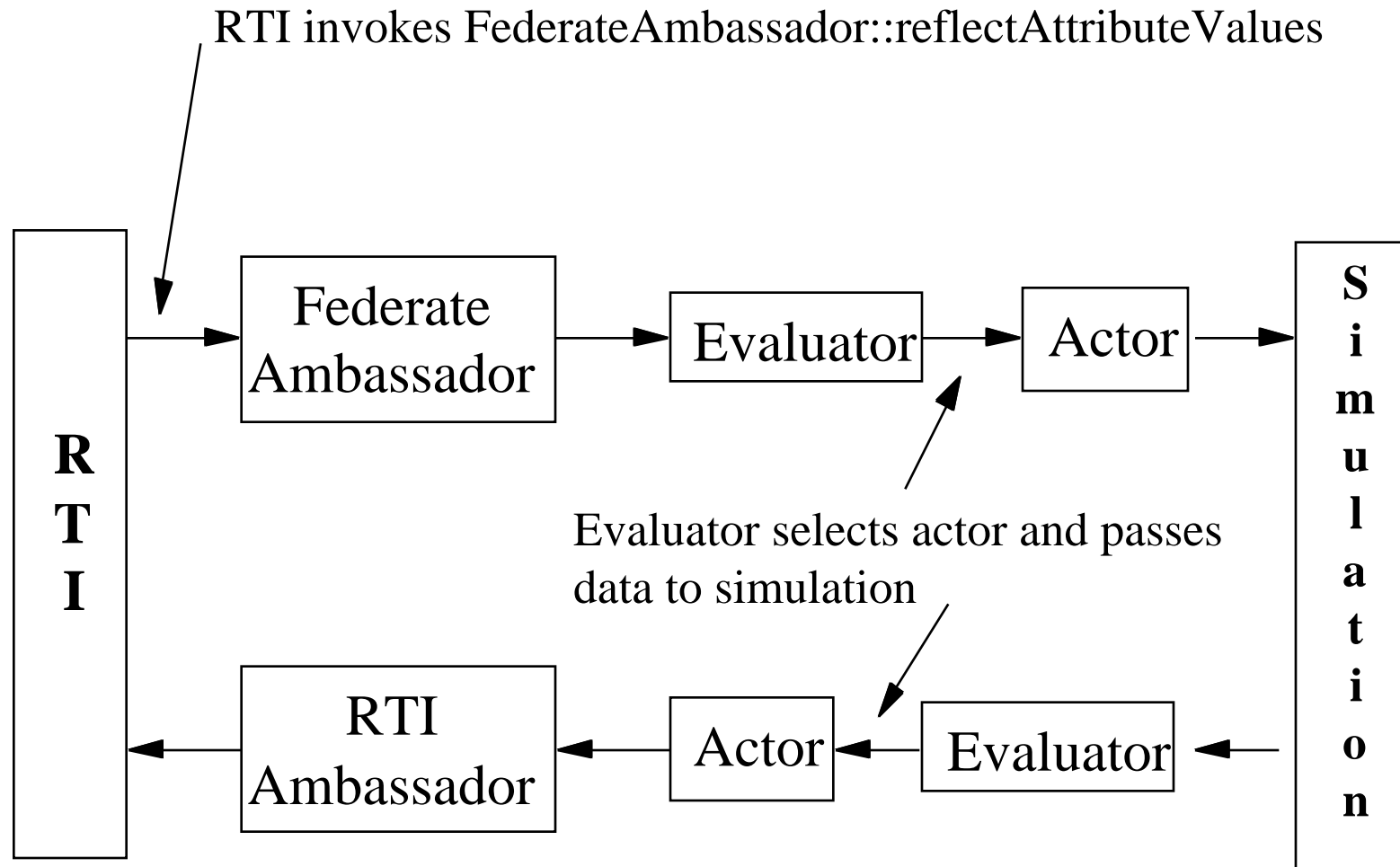
- Purpose: Develop software to facilitate the integration of ModSAF & HLA Testbed simulations with the RTI.
 - Encapsulation and automation of services all simulations must exercise (create/destroy/join/resign federation, publication/subscription, etc.)
 - FOM Management and RTTI services
 - Support for OO FOM data representation (deep class hierarchy etc.)
 - Efficient mapping between RTI Run-time typing and simulation compile-time typing
 - Framework for translation between simulation and FOM data representation
 - Common instrumentation for performance analysis



Federation Common Software

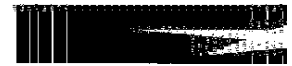


-  Simulation Translation Software
-  Federation Common Software
-  RTI Software

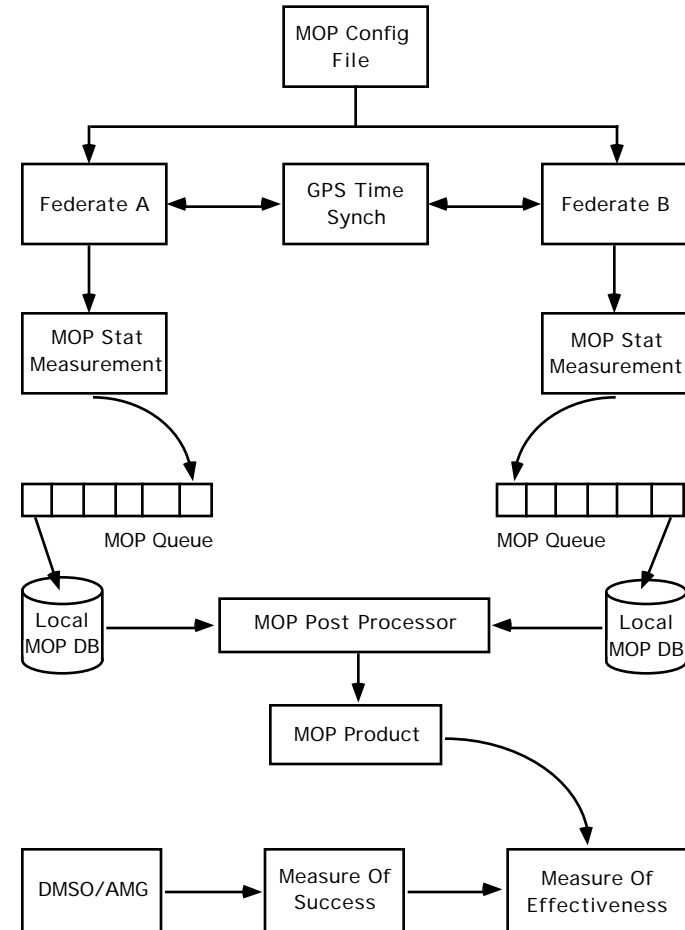




FCS/RTI Performance Instrumentation



- Instrumentation Approach
 - Goal: Measure & collect with as little intrusion as possible
 - Log relevant RTI invocations for latency post-processing
 - Use separate thread for I/O to local DB to reduce intrusion
- Instrumentation Plan
 - Specifies required information for instrumentation of Performance Framework including Latency, Resource Utilization, Configuration & Control variables
- FCS extension
 - Instrument at RTI interface
 - Add persistence of MOP.data
 - Add support for compile & run-time selection of MOP's to collect



- Federate Changes
 - With our Federation Common Software (FCS) Library we have fewer changes in each federate
 - Various changes for time management to assure proper state updates in case of unordered delivery by RTI
 - Each Federate has specific code to extend the FCS Libraries
 - The most intensive software module is the interface between the simulations local world view and the FCS Evaluator and Actor classes for processing the attributes